

Borehole

**41-02-08**Log Event **A****Borehole Information**

|                         |                                 |                                  |
|-------------------------|---------------------------------|----------------------------------|
| Farm : <u>SX</u>        | Tank : <u>SX-102</u>            | Site Number : <u>299-W23-136</u> |
| N-Coord : <u>35,548</u> | W-Coord : <u>75,811</u>         | TOC Elevation : <u>661.64</u>    |
| Water Level, ft :       | Date Drilled : <u>1/18/1972</u> |                                  |

**Casing Record**

|                            |                                |                    |
|----------------------------|--------------------------------|--------------------|
| Type : <u>Steel-welded</u> | Thickness : <u>0.280</u>       | ID, in. : <u>6</u> |
| Top Depth, ft. : <u>0</u>  | Bottom Depth, ft. : <u>100</u> |                    |

**Equipment Information**

|                                   |   |                                    |
|-----------------------------------|---|------------------------------------|
| Logging System : <u>2</u>         | Detector Type : <u>HPGe</u>               | Detector Efficiency: <u>35.0 %</u> |
| Calibration Date : <u>03/1995</u> | Calibration Reference : <u>GJPO-HAN-1</u> |                                    |

**Logging Information**

|                                 |                                 |                                     |
|---------------------------------|---------------------------------|-------------------------------------|
| Log Run Number : <u>1</u>       | Log Run Date : <u>4/25/1995</u> | Logging Engineer: <u>Kim Benham</u> |
| Start Depth, ft.: <u>97.5</u>   | Counting Time, sec.: <u>100</u> | L/R : <u>L</u> Shield : <u>N</u>    |
| Finish Depth, ft. : <u>34.5</u> | MSA Interval, ft. : <u>0.5</u>  | Log Speed, ft/min.: <u>n/a</u>      |

|                                |                                 |                                     |
|--------------------------------|---------------------------------|-------------------------------------|
| Log Run Number : <u>2</u>      | Log Run Date : <u>4/26/1995</u> | Logging Engineer: <u>Kim Benham</u> |
| Start Depth, ft.: <u>35.5</u>  | Counting Time, sec.: <u>100</u> | L/R : <u>L</u> Shield : <u>N</u>    |
| Finish Depth, ft. : <u>0.0</u> | MSA Interval, ft. : <u>0.5</u>  | Log Speed, ft/min.: <u>n/a</u>      |

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**Analysis Information**

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Analyst : S.E. KosData Processing Reference : Data Analysis Manual Ver. 1Analysis Date : 8/4/1995**Analysis Notes :**

Borehole 41-02-08 was completed with a 6-in.-nominal-diameter carbon steel casing to a depth of 100 ft (TD). The wall thickness of the casing is 5/16 in. The casing correction used for data analysis was .33 in.; consequently, the reported activities may be slightly lower than actual. No water correction was applied to the data below 93.5 ft.

Cs-137 was the only man-made gamma-ray emitting radionuclide identified. It was detected from the surface to 32 ft, from 34 to 42 ft, from 44 to 59 ft, intermittently from 64 to 90 ft, and from 90 ft to TD. The Cs-137 activity in the interval of the intermittent occurrence is at or slightly above the MDA. Maximum Cs-137 activity of > 50 pCi/g was detected at approximately 16 ft. The Cs-137 activity increased at the bottom of the borehole.

**Log Plot Notes:**

Three log plots are provided. The Cs-137 concentration is plotted alone to provide details of concentration and distribution. The error of calculated Cs-137 activity is shown by error bars that represent the 95-percent confidence interval. The calculated MDA is represented as open circles on the log plots.

The plot of natural gamma logs is a plot of naturally occurring radionuclides, including potassium, uranium, and thorium (KUT). It is prepared to allow correlation of lithologically related features between boreholes. The activities of the KUT data are typical for Hanford sediments.

On the Th-232 plot, the MDA value is shown as zero at some depth locations. This zero value was a result of an anomaly in the commercial spectrum analysis spectrum software which has been corrected by the vendor. Because the MDA calculation at these few points is not significant relative to the intended use of the plot, the data were not reprocessed and corrected. Therefore, these MDA data points on the plot should be ignored.

A combination plot incorporates the Cs-137 and KUT data with total gamma count rate derived from the spectral gamma data and WHC gross gamma data acquired with the Tank Farms gross gamma logging systems. The combination plot allows correlation of Cs-137 occurrence with lithologic features.